DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the use of the trademark "aspartame™" has been noted on p 12. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Comments

2. The phrase "wherein pH of the preparation in a form of a solution just before gelation" appears in claims 3 and 9. It is respectfully suggested that the grammar of this claim would be improved by the insertion of "the" prior to pH.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 – 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishii et al. (WO 99/55320) in view of Sequeira et al. (US 5,879,711).

Nishii et al. discloses oral formulations of a biguanide drug and an organic acid (p 2, ln 1 – 2) that can take a variety of forms, including jelly and gum drops (p 2, ln 25 -

27). The preferred pH of the composition is 3.5 to 6 in order to decrease the unpleasant taste and to keep the biguanide drug stable (p 3, ln 26 – p 4, ln 4). In example 9 (p 9, ln 13 – 26), a jelly comprising metformin hydrochloride, gelatin and malic acid is prepared. In this example, the weight ratio of the acid component to the biguanide drug is 0.16:1. In example 11 (p 10, ln 17 – p 11, ln 6), a gum drop formulation (with a higher percentage of gelatin) and buformin hydrochloride is prepared with a weight ratio of the acid component to the biguanide drug of 1:1.

Nishii et al. does not disclose the use of inorganic acids, such as phosphoric acid or hydrochloric acid and their basic counterions, in the jelly formulations.

Sequeira et al. disclose gel (jelly) pharmaceutical composition with an apparent pH value of no more than about 5 (col 1, ln 5 – 11). Buffer systems that can typically be used to maintain the desired pH level of the gel include phosphoric acid/sodium phosphate monobasic, citric acid/sodium citrate and acetic acid/sodium acetate (col 3, ln 24 – 36).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to prepare a jelly formulation of a biguanide drug with a water-soluble polymer, as taught by Nishii et al., and use an inorganic acid in lieu of the organic acid used by Nishii et al. as Sequeira et al. discloses that inorganic acids systems such as phosphoric acid and sodium phosphate monobasic are useful in maintaining the pH of jelly drug formulations.

7. Claims 1 – 3 and 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishii et al. and Sequeira et al. as applied to claims 1 – 6, 8 and 9 above further in view of Hart et al. (US 5,422,134).

Nishii et al. discloses oral formulations of a biguanide drug and an organic acid (p 2, ln 1 – 2) that can take a variety of forms, including jelly and gum drops (p 2, ln 25 - 27). To make the jelly or gum drop, the water soluble polymer gelatin is used. The preferred pH of the composition is 3.5 to 6 in order to decrease unpleasant taste and to keep the biguanide drug stable (p 3, ln 26 – p 4, ln 4). Sequeira et al. discloses that inorganic acids can be used in place of the organic acids taught by Nishii et al. to adjust the pH of the gel formulation.

Neither reference discloses the use of water-soluble polymers besides gelatin such as pectin, agar, gums of various types or pullulan as required in claim 7.

Hart et al. discloses a variety of gelling agents (col 1, ln 6). Among the agents that gel reversibly on cooling are carrageenan, gelatin (col 1, ln 14 – 21), and a mixture of locust bean gum and xanthan gum (col 6, ln 18 – 23).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to prepare a jelly formulation comprising a biguanide drugs such as metformin with an inorganic acid, as taught by Nishii et al. and Sequeira et al., as to use another water-soluble polymer such as carrageen or locust bean gum, taught by Hart et al. as functionally equivalent to the gelatin used in the composition of Nishii et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nissa M. Westerberg whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8 a.m. - 4 p.m. ET. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

NMW